Given Grid

```
00000000000000000000000000000000000000000
00000000000000000000000000000000000000000
00000000001000000000000000000000000000000
0000000000111000000000000000000000000000000
00000000001000000000000001000000000000000
00000000000000000000000000111000000000000
00000000000000000000000000001000000000000
00000000000000000000000000000000000000000
```

Setting Start and Goal

```
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOSOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOOOOOOO1OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOOOOOOO111OOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOOOOOOOO1OOOOOOOOOOOOOO1OOOOOOOOOOOOOO
OOOOOOOOOOOOOOOOOOOOOOOOO111OOOOOOOOOOOOO
OOOOOOOOOOOOOOOOOOOOOOOO1OOOOOOOGOOOO
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
```

Inflate Obstacles

```
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOSOOOOO111OOOOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOOOOOOO11111OOOOOOOOOOOOOOOOOOOOOOOOOO
OOOOOOOOOO11111OOOOOOOOOOOO111OOOOOOOOOOO
OOOOOOOOOO11111OOOOOOOOOOO11111OOOOOOOOOO
OOOOOOOOOOO111OOOOOOOOOOOO11111OOOOOOOOOO
OOOOOOOOOOOOOOOOOOOOOOOOOO11111OOOOOGOOOO
OOOOOOOOOOOOOOOOOOOOOOOOOOO111OOOOOOOOOOO
```

Lowering Resolution

Lowering Resolution

00**S**00**11**00000000000000

0000**111**000000**11**00000
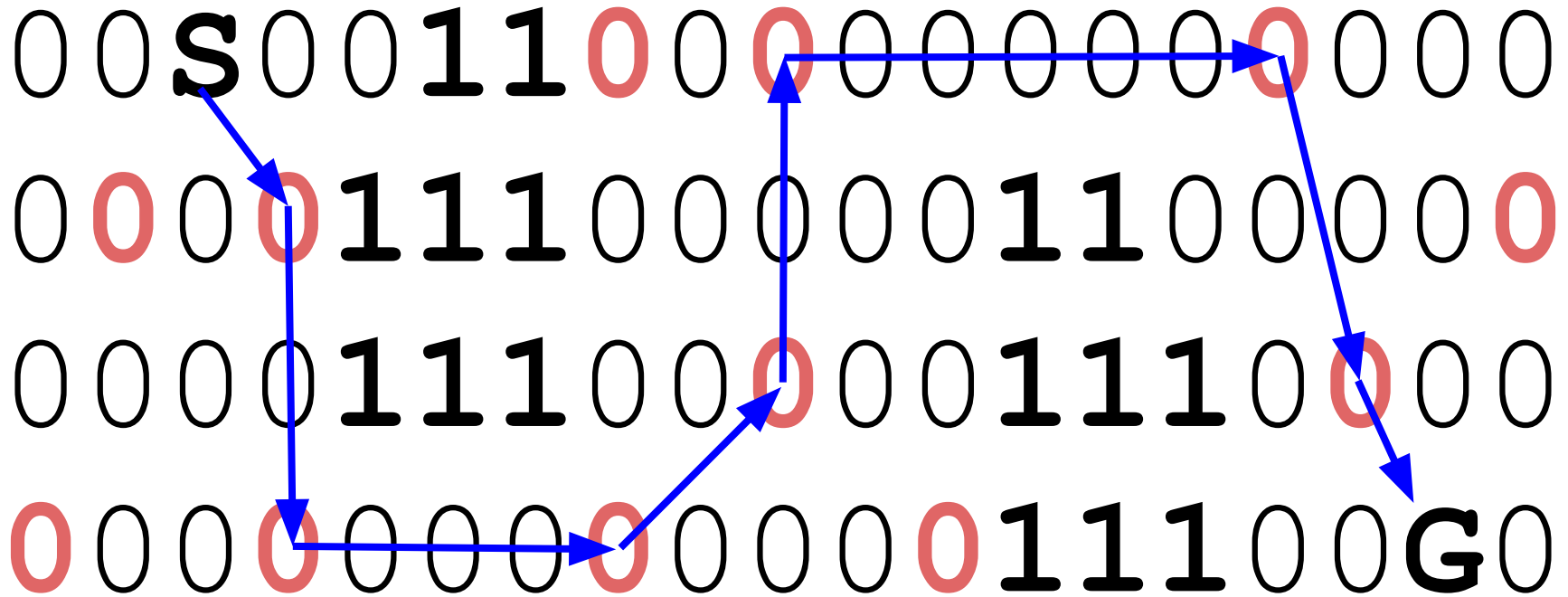
0000**111**000000**111**0000

0000000000000**111**00**G**0

Sample N Points

00**S**00**11**0000000000**0**000

0**0**0**0111**00000**11**00000**0**

0000**111**00**0**000**111**0**0**00

0000**0**000**0**000**0111**00**G**0

Sample N Points

- **Each point inserted to a KD-Node**

- **Calculate Adj-Matrix using KNN and KD-Tree**

Shortest-Path Using Dijkstra

Path On The Original Grid